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09/505,003	02/15/2000	Paul Lapstun	SP05US	8445

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EXAMINER
TRAN, DOUGLAS Q

ART UNIT	PAPER NUMBER
2624	3

DATE MAILED: 05/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/505,003	LAPSTUN ET AL.	
	Examiner	Art Unit	
	Douglas Q. Tran	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1 and 5-8 is/are rejected.

7)☒ Claim(s) 2-4 and 9 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 2/15/00 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings (i.e., figures 11, 12) must show a feature of "the printhead controller" of the invention specified in at least claims 1 and 6. Therefore, the "a printhead controller" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

If the limitation of "a printhead controller" is addressed in these above claims 1 and 6 as "a print engine controller", the examiner suggests that the limitation of "a printhead controller" should change to "a print engine controller" which based on the limitation of print engine controller 148 in fig. 11 and 12 of the specification.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Rosenthal (US Patent No. 6,337,747 B1) and Rumph et al. (US Patent No. 6,429,948 B1).

As to claim 1, Rosenthal teaches a printer controller (30 in fig. 3) for a printer (fig. 3 is representative of the printer because the printer controller 30 is located inside of the framework of a printer 10 "col. 6 lines 17-18". Thus, in this case, the printer 10 is representative of a print engine) , the controller control including:

a processing means (i.e., a CPU 31 in fig. 3) for receiving incoming data relating to a description of a page (i.e., a page description language "PDL") to be printed, said descriptions containing either color data or black text data (col. 7, lines 8-9 and a step of S400 in fig. 4 shows page of PDL data is received by the controller 30, which includes the CPU "31 in fig. 3" for controlling the entire of the printer controller system; and the Page Description Language "i.e., Postscript or PCL", which is described as well known in the prior art " in fig. 2" and generated from the workstations " 1 in fig. 2", includes either a black text data or a color data in which the different compression techniques are applied to either black text image or the color image "col. 2, lines 2-4 and 11-17);

a memory means (i.e., a hard disk 33 and/or the RAM portion of the memory 34 in fig. 3) in which the data are stored (col. 7, lines 8-10);

a rasterizing and compressing means (i.e., the CPU 31 in fig. 3) for rasterizing and compressing data (col. 7, lines 2-5 describes that a page of data in a PDL format is rendered to each band of the page into a rasterized format and compressed by the controller 30 "or CPU 31 in fig. 3 for controlling an entire of the system"), each of two different compressions is used to

the rasterized page (col. 7, lines 2-7 describes that the page of data is divided into bands, each band is rendered into a rasterized format, then all of bands of the rasterized page are compressed. All of bands of the rasterized page are compressed by either the lossless compression " S405 in fig. 4, and col. 7, lines 17-21 and "56-58" or the lossy compression "S413 in fig. 4, and col. 7, lines 59-60" that is a JPEG compression);

(It is noted that, with respect to Description of the Related Art in Rosenthal, col. 1, line 64 to col. 2, line 4 explains that the lossless compression is applied to text and black-only graphics images, and col. 2, lines 11-17 explains that the lossy compression or JPEG compression is used for multi-level images such as natural photographs which is representative of color images. Therefore, the data in the page of PDL is classified as either black text data or color data, if a page contains the black text data, then the lossless compression is applied; and if a page contains the color data, then the lossy compression is applied);

a printhead controller (i.e., a video interface 40 "in fig. 3" that performs the same function as the printhead controller) for receiving, decompressing and processing the data (col. 6, lines 57-59 describes that the video interface including decompression co-processing hardware and pixel reconstruction hardware for decompressing the compressed files of image data "col. 8, lines 15-19" and reconstructing the rasterized image data "col. 8, lines 25-27") for printing via a printhead (i.e., a print engine "10 in fig. 3" here would be representatively of a printhead because the print engine includes the printhead for printing out the rasterized image data into a hard copy or a recording medium) under control of the printhead controller (i.e., the video interface 40 in fig. 3; and col. 8, lines 29-30 describes that the video interface 40 controls the print engine 10 "in fig. 3" by transmitting the pixels to the printer engine 10 in a timely fashion for printing).

However, Rosenthal does not teach 1) his printer is the inkjet printer which accepts a page description language "PDL"; and 2) the compression of the color data and black text data being effected separately from each other.

Rumph teaches that: 1) either a laser printer or a inkjet printer would accepts a page description language "PDL" (col. 7, lines 17-22); and 2) the compression of the color data and black text data being effected separately from each other (col. 19, lines 44-50 describes that it is possible to optimize the data compression based on the object type. Using the JPEG compression technique to color image data and using binary compression techniques to black/white data and other types of data).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the printer of Rosenthal to be an inkjet printer and the CPU 31 of Rosenthal for using the different compression to apply to the color data and black/white text data as taught by Rumph. The suggestion for modifying the printing system and the CPU 31of Rosenthal can be reasoned by one of ordinary skill in the art as set forth above by Rumph because the modified printer of Rosenthal which would increase the flexibility of the printer controller in order to enable the controlling of the inkjet print engine in the printer for performing the printing and which would increase the functionality of the CPU for using each of the compression methods for each type of data on the document. The resultant systems would allow either the laser printer or the inkjet printer can perform the compression methods to the different type of data on the document.

As to claim 6, Rosenthal discloses in a printer controller (30 in fig. 3), a method of printing (i.e., by the print engine 10 in fig. 3) a description of a page containing either color data

or black text data (the Page Description Language "i.e., Postscript or PCL", which is described as well known in the prior art " in fig. 2" and generated from the workstations " 1 in fig. 2", includes either the black text data or the color data in which the different compression techniques are applied to either black text image and the color image "col. 2, lines 2-4 and 11-17), the method including the steps of:

receiving (i.e., by a network interface hardware 35 in fig. 3) the data relating to a description of a page (i.e., a page description language "PDL") to be printed from a host computer (col. 5, lines 54-58);

storing the received data in a memory means (i.e., a hard disk 33 and/or the RAM portion of the memory 34 in fig. 3 for storing the received data "col. 7, lines 8-10");

rasterizing and compressing the received data to create a compressed page format (col. 7, lines 2-6 describes that a page of data in a PDL format is rendered to each band of the page into a rasterized format and the rasterized bands are compressed into compressed corrector files), each of two different compressions is used to the rasterized page (col. 7, lines 2-7 describes that the page of data is divided into bands, each band is rendered into a rasterized format, then all of bands of the rasterized page are compressed. All of bands of the rasterized page are compressed by either the lossless compression " S405 in fig. 4, and col. 7, lines 17-21 and "56-58" or the lossy compression "S413 in fig. 4, and col. 7, lines 59-60" that is a JPEG compression);

feeding the compressed page format data to a printhead controller (i.e., a video interface 40 "in fig. 3" that performs the same function as the printhead controller. Col. 8, lines 20-21 describes that the video interface 40 receives the compressed files which are the compressed bands of the rasterized page "col. 7, lines 5-6"); and

expanding the compressed page format data in the printhead controller prior to printing of the image (it is noted that the video interface 40 "in fig. 3" that performs the same function as the printhead controller because it receives, decompresses and processes the data. Col. 6, lines 57-59 describes that the video interface including decompression co-processing hardware and pixel reconstruction hardware for decompressing the compressed files "or bands" of image data "col. 8, lines 15-19" and reconstructing the rasterized image data prior to printing of the image "col. 8, lines 25-27 and 29-30")

However, Rosenthal does not teach 1) his printer is the inkjet printer which accepts a page description language "PDL"; and 2) the compression of the color data and black text data being effected separately from each other.

Rumph teaches that: 1) either a laser printer or an inkjet printer would accepts a page description language "PDL" (col. 7, lines 17-22); and 2) the compression of the color data and black text data being effected separately from each other (col. 19, lines 44-50 describes that it is possible to optimize the data compression based on the object type. Using the JPEG compression technique to color image data and using binary compression techniques to black/white data and other types of data).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the printing system of Rosenthal to be an inkjet printer and to use the different compression to apply to the color data and black/white text data as taught by Rumph. The suggestion for modifying the printing system and the CPU 31of Rosenthal can be reasoned by one of ordinary skill in the art as set forth above by Rumph because the modified printer of Rosenthal which would increase the flexibility in order to enable the controlling of the

inkjet print engine in the printer for performing the printing instead of the laser printer and which would increase the functionality by using each of the compression methods for each type of data on the document. The resultant systems would allow either the laser printer or the inkjet printer can perform the compression methods to the different type of data on the document.

As to claim 7, Rosenthal and Rumph disclose every feature discussed in claim 6, and Rosenthal further teaches that prior to feeding the compressed page format data to the printhead controller, storing the compressed page format data in the memory means (col. 7, line 67 to col. 8, line 2 describes that the RAM portion of the memory 34 for storing an entire compressed page).

As to claim 8, Rosenthal and Rumph disclose every feature discussed in claim 6, and Rosenthal further teaches of feeding the expanded data to at least one printhead controlled by the printhead controller (col. 8, lines 15-17 describes that after the video interface 40 "or print engine controller" decompresses the compressed files into pixels of rasterized image data "col. 8, lines 26-28" , the pixels are sent to the print engine 10 in a timely fashion for printing "col. 8, lines 29-30". It is noted that the print engine would inherently include at least one printhead for printing out the image data into the recording sheets).

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Rosenthal, Rumph as applied to claim 1 above, and further in view of Kashiwazaki (US Patent No. 6,459,497 B1).

As to claim 5, Rosenthal and Rumph teach every feature in claim 1, and Rosenthal further teaches the memory means is the hard disk (i.e., from the hard disk drive 33 in fig. 3) communicates with the processing means (i.e., the CPU 31 in fig. 3) via two of the data

communication means (i.e., a host bus 32 and a I/O bus 39 in fig. 3) (col. 6 lines 27-30 describes that the hard disk for storing the program instruction and the page of data from the host computer "col. 7, lines 8-10". Thus, the CPU communicates with the hard disk by receiving the instruction from the hard disk for processing the page of data from the hard disk).

However, neither Rosenthal nor Rumph teach the memory means is a hard disk which communicates with the processing means via a disk controller and a data communication means.

Kashiwazaki teaches the memory means is a hard disk (14 in fig. 2) which communicates with the processing means (i.e., the CPU 12 in fig. 2) via a disk controller (i.e., Memory controller "MC" 20 in fig. 2) and a data communications means (i.e., a system bus 15 in fig. 2) (col. 7, lines 15-17 describes that the printer includes CPU 12 for enabling communication processing between the host computer via an input unit 18; and, with respect to col. 7, lines 4-7 and 25-27, the CPU for controlling to devices connected to a system bus 15 and for controlling the printer system by the control programs stored in the hard disk " an external memory 14" via the memory controller "20 in fig. 2").

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the printer of Rosenthal and Rumph in order for the hard disk for communicating with the processing means "or the CPU" via a disk controller and a communication means as taught by Kashiwazaki. The suggestion for modifying the printer of Rosenthal and Rumph can be reasoned by one of ordinary skill in the art as set forth above by Kashiwazaki because the modified printer of the Rosenthal and Rumph would increase the simplicity and the efficiency to the printing system by communicating between the hard disk and the CPU via the disk controller and a communication means. The resultant systems would be

faster when the CPU communicates with the hard disk via only one system bus and the CPU easily controls a plurality of the types of the data stored in the hard disk by using the disk controller.

Allowable Subject Matter

Claim 2-4 are objected to as being dependent upon a rejected base claims 1 and claim 9 are objected to as being dependent upon a rejected base claims 6 and 8, but claims 2 and 9 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for objecting:

As to claim 2, the prior art, taken either singly or in combination, does not teach "the rasterizing and compressing means includes at least raster image processor (RIP) digital signal processor (DSP)".

As to claim 9, the prior art, taken either singly or in combination, does not teach "when the printhead controller receives the compressed page format data, storing the data in a local memory means of the printhead controller."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas Q. Tran whose telephone number is (703) 305-4857 or E-mail address is Douglas.tran@uspto.gov.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Douglas Q. Tran
May 01, 2003